PROCEEDINGS OF THE

ROYAL ENTOMOLOGICAL SOCIETY

OF LONDON

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ORDINARY MEETING

WEDNESDAY, 3RD NOVEMBER, 1948, at 5.30 p.m.

AGENDA

1. Confirmation of the Proceedings of the Ordinary Meeting held on 6th October, 1948.
2. Recommendations of candidates for Fellowship.
3. Announcement of election of new Fellows.
4. Additions to the Library.

Presented.

Roy, D. N. *Entomology (medical and veterinary).* 4to. Calcutta. 1946. [Dr. A. D. Imms.]
Hargreaves, H. *List of recorded cotton insects of the world.* 8vo. London. 1948. [Commonwealth Institute of Entomology.]
[Rennie, J.] *Insect architecture.* 12mo. London. 1830. [Mr. H. E. Box.]

Purchased.

Frisch, K. von. The dances of the Honey Bee. *Bull. Anim. Behaviour,* **1** (5) : 1–32, 1947.
Jeannel, R. *Nouvel Atlas d'Entomologie.* No. 1. Introduction. 3 fascs. 8vo. Paris. 1945–1946.
Chopard, L. *Nouvel Atlas d'Entomologie.* No. 3. Atlas des Libellules. 1 fasc. 8vo. Paris. 1948.
Villiers, A. *Nouvel Atlas d'Entomologie.* No. 4. Atlas des Hémipteres. 2 fascs. 8vo. Paris. 1945–1947.

In addition separates have been presented by the Anti-Locust Research Centre, Mr. E. P. Wiltshire, Professor R. E. Snodgrass, Professor F. Silvestri, Mr. R. C. Rainey, the U.S. Department of Agriculture, Dr. A. D. Imms, Dauntsey's School, Mr. E. F. Gilmour, the Rev. E. J. Pearce, Mr. E. S. Brown, Mr. H. E. Box, Professor P. A. Buxton, Dr. B. P. Beirne, and the Ministry of Agriculture and Fisheries Infestation Division.

5. Exhibits.
6. Admission of Fellows.
7. Nomination of Officers and Council for 1949.
8. Communications.

Dr. T. H. C. Taylor.

Biological Control.

[ABSTRACT]

The control in Fiji of the Hispid beetle, *Promecotheca reichei* Baly, which was one of three pests of coconut palms controlled by means of introduced parasites, is a particularly interesting instance of the utilization of a parasitic insect specially selected to operate in very exacting circumstances. The unusual circumstances arose from the accidental introduction into Fiji of a parasitic mite which periodically proceeded to attack and destroy the early stages of *P. reichei* to such an extent that the indigenous enemies of the beetle, which had previously controlled it effectively by parasitizing its eggs and larvae, were rendered incapable, through periodic lack of the stages they required, of playing any further part in its control. Severe outbreaks of the beetle consequently occurred. Although the mite destroyed almost all of the early stages from time to time, it was nevertheless the cause of the outbreaks, and these could be prevented only by a natural enemy that could multiply in the circumstances in which the indigenous enemies were unable to do so. A parasite fulfilling these special requirements was found, amongst others, attacking another species of *Promecotheca* in Java. It was introduced into Fiji and proved highly successful.

A detailed account of this work, illustrated by slides, will be followed by a brief consideration of some of the general principles involved in biological control.

TEA will be served in the Library before the meeting.

NOTICES

The meeting on **1st December** will be devoted to small exhibits of special interest requiring only a short explanation. Fellows wishing to make such exhibits are asked to forward brief summaries to the Secretary not later than 14th November.

A card index of Fellows' addresses arranged **on a geographical basis** is now available for the use of Fellows in the Society's Rooms. Addresses in Great Britain are grouped under counties : elsewhere under Dominions, Colonies, Foreign States, etc.

ADMISSION OF FELLOWS

Any Fellow who has not been formally admitted to the Society under Chapter XIV, Section 4 of the Bye-laws and attends the meeting on 3rd November, 1948, is requested to inform the Secretary before 5.15 p.m. on that date.

PROCEEDINGS OF THE ORDINARY MEETING HELD ON 6TH OCTOBER, 1948.

Dr. C. B. Williams, M.A., President, in the Chair.

Present, 75 Fellows and 13 Visitors.

The minutes of the Ordinary Meeting held on 1st September, 1948, were confirmed and signed by the President.

The names of the following candidates for election were read:—For the first time: H. S. Atkinson, A. E. Gardner, R. S. Hanoman, M.B., B.Sc., Capt. D.

Leatherdale, Dr. C. R. Palmer, H. R. Pearson, C. Teasdale, B.Sc., and Miss J. B. Walker, B.Sc.

For the second time : M. V. Brian, A. J. M. B. Chalmers-Hunt, W. Cottier, D.Sc., F. Fernandez-Yepez, Ing. Agro, G. Heslop Harrison, B.Sc., Ph.D., F.R.S.E., P. H. Holloway, D. L. Johns, B.Sc., Major F. L. Johnson, M.B.E., W. Ruttledge, B.A., Lt.-Col. P. W. Morrison-Godfrey, K. L. Roos, Dr. Phil., G. H. Satchell, B.Sc., Ph.D., T. R. E. Southwood, F. T. Vallins, and P. R. Wilkinson.

The Secretary read the names of the following newly elected Fellows of the Society : Miss B. Bradford, M.Sc., Dept. of Zoology and Entomology, Rhodes University College, Grahamstown, South Africa ; Miss Elinor M. Debenham, Ministry of Agriculture and Fisheries, 5, St. Helen's Place, Bishopsgate, London, E.C. 3 ; Mohammed Abdul Ghani, Fernald Hall, University of Massachusetts, Amherst, Mass., U.S.A. ; Miss J. Glaholm, M.Sc., Dept. of Zoology and Entomology, Rhodes University College, Grahamstown, South Africa ; J. H. Porter, 8, Kemmel Avenue, Warrington, Lancs. ; P. R. Stephenson, Agricultural Department, P.O. Box 338, Nairobi, Kenya ; D. A. Tidman, F.R.S.Trop. Med. & H., West Heath House, 115, Woolwich Road, Abbey Wood, London, S.E. 2 ; Dr. Luis Vargas, M.D., M.P.H., M.Sc., Calle de la Escuela, Medico-Militar No. 20, Mexico City, South America.

Thanks were voted to donors of gifts to the Library since the last meeting.

The death of Mr. G. J. Arrow, elected a Fellow in 1899, and of Mr. A. M. Stewart, elected in 1923, was announced from the Chair.

The President said that at their next meeting Council would be considering the nomination of Officers and Council for 1949 ; Fellows who wished to suggest candidates for the vacancies were asked to give the names to any member of Council before the next meeting.

The President also announced that the South London Entomological and Natural History Society extended a cordial invitation to Fellows of the Society to their annual exhibition on Saturday, 30th October, at Burlington House.

Dr. H. B. D. Kettlewell showed a coloured transparency of aberrations of *Rhodometra sacraria*. These were the result of many scores of experiments on the effect of normal temperatures on the pupae. He had bred and inbred between two and three thousand. He pointed out that the species was sexually dimorphic, the normal male having a pink band and the corresponding female a brown one. In certain broods, however, a very small proportion of insects showed the reverse colours. Similarly in regard to the ground-colour it was found to vary from the usual " straw yellow " to crimson, brown, smoky, etc., and individuals striated with pink (ab. *aucta* and ab. *sanguinaria*) were also bred. All these were at first thought to be directly under temperature control and there was little evidence of a genetic origin. However, subsequently certain somatic mosaics appeared in the broods, in one case a male with one side having a brown band and the other a pink, and in several other cases individuals with one side having a crimson ground-colour and the other yellow. This proved definitely, in his opinion, that the colour of both the band and the ground colour was at least in part genetic in origin. Subsequently it was shown that the band was a composite one consisting of three bands. The only interpretation he could read from his results was that all these (and the ground-colour) were primarily under genetic control, but that each gene responsible must be under the influence of temperature, and varied to a certain degree in its expression according to the exact temperature used, which was an extremely complex problem. He stated that he hoped that a coloured plate would appear in the *Entomologist* along with his paper subsequently. The photograph had been taken by Mr. Paul de Laszlo on American Kodachrome.

Baron C. G. M. de Worms exhibited a living female specimen of *Sedina büttneri* Hering. The moth was slightly malformed, and was taken at rest on the stem of its chief food-plant, the sedge, *Carex acutiformis*, about 9.30 p.m. on the night of 3rd October, 1948, in its special breeding locality at Freshwater in the Isle of Wight. On this occasion the night was mild with cloud and a slight drizzle, and the males had been flying fairly freely among the reeds an hour earlier.

He said this species, first discovered in this country in this area by Dr. K. G. Blair in late September, 1945, had been taken in varying numbers each year since. It was first described by Hering in 1856 from Stettin, and the most concise account of its life-history and habits was given in 1933 by Urbahn (1933, *Stettin. ent. Ztg.*, **94** : 136–193, 322–325). In this account he described the laying habits of the insect and the growth and pupation of the larva. In the series of the moths he depicted it would seem that the hind wings were appreciably less dark than in our specimens.

An interesting feature of this species was its distribution in Europe. It was originally only supposed to occur in the extreme east of Germany and in Russia, but it had since been discovered much further to the west, even into northern France. It seemed likely that it should occur elsewhere in the British Isles, and an intensive search in suitable localities would be well worth while.

The exhibit also included a string of ova laid by the insect on the underside of the stem of *Carex acutiformis*. So far attempts to breed it in this country had proved unsuccessful. The ova was said to hatch in April and May, and the larva to pupate in August.

Mr. A. S. Taylor, Mr. P. Hunter-Jones, Dr. H. Hurst, and Mr. A. S. Talhouk signed the Obligation Book and were admitted Fellows of the Society.

Dr. R. L. Usinger, assistant Professor of Entomology in the University of California, read a paper, an abstract of which appeared on page 36, on speciation in Hawaiian Insects.

In the discussion which followed Professor Buxton said the origin of the peculiar Hawaiian insect fauna was more easily explained if it was derived from the west, but this raised difficulties owing to the depth of the intervening ocean.

Professor Varley considered that when a species entered a favourable environment without its normal parasites it was to be expected that it would increase in numbers and that mutants would survive, because of the reduced selective pressure, that could not have done so in a mainland habitat. However, some other factor must intervene to check the increase in numbers. He considered this factor to be intrapecific population pressure.

Dr. Taylor agreed that the very large number of species in the Hawaiian Islands was very remarkable, and was not confined to the Orders which Dr. Usinger had mentioned. There was no parallel case, so far as he knew, in other island groups in the South Pacific.

Dr. van Emden referred to similar speciation in the fauna of mountain ranges.

N. D. RILEY, *Honorary Secretary.*

The next meeting will be held on 1st December at 5.30 p.m.

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